

Work Order ID 123172

123172

Page 1

July-30-14 11:49:47 AM

Item ID: D212-664-201

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Aft Crosstube - High

Start Date: 7/30/14 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/08/14 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: U Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D212-664-241	E
DSI9563	B

100 Document Control 0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels as per PPP D212-664-201

CHG006

① 1402-03

DAS
9
9-89

110 Pick Kit 0.00

110

Packaging

Packaging

Memo

0.00

Packaging

BL

1407-31

Work Order ID 123172

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Page 2

Item ID: D212-664-201 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Aft Crosstube - High
 Start Date: 7/30/14 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/08/14 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	BENDING MACHINE - CROSSTUBES	0.00				<u>BL</u>		<u>14-07-31</u>	
120		0.00							
CNC Bend 2	Memo								
CNC Alpha 160 Bender	***VERF SET-UP BEFORE BENDING BY: <u>tu</u> ***								
	Bend tube as per Dwg D212-664-241 using CNC bender program 212-aft								
130	QC15- Crosstube Dimensional Check	0.00							
130		0.00							
QC	Memo								
Quality Control									

DAS
16
9-89 1460265

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Item ID: D212-664-201

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Aft Crosstube - High

Start Date: 7/30/14 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 8/08/14 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140

140

Crosstubes

Crosstubes

Crosstubes

Memo

0.00

1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550, DT8551, drill table DT8577 and locate tower holes #8 as per QSI0010.

2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241

4- ***WEAR LATEX GLOVES HANDLING CROSSTUBE.*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241

DC 14/08/05

DAS
16
9-89

150

150

QC

Quality Control

QC5- Inspect part completeness to step on W/O 0.00

Memo

0.00

WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.

DC 14/08/06

14/08/06

DAS
38
9-89

14/08/06

Work Order ID 123172

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Item ID: D212-664-201 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Aft Crosstube - High
Start Date: 7/30/14 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 8/08/14 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160		0.00							DAS 41 9-89
160									
HandFXtube	Memo	0.00							14-8-6

Hand Finishing Crosstubes ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***
1- CLEAN CROSSTUBE WITH WASH'N WIPE

180	Outsource process - NDT per QSI038 4.1	0.00							
180									
Outsource2	Memo	0.00							

Outsource process - NDT
WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.
Liquid Penetrant Inspection as per QSI 038
Issue P/O: _____
LPI as per ASTM 1417 Level 2
Attach copy of NDT results to work order

190	Receive & Inspect for Damage & Mat'l Certs	0.00							
190									
Packaging	Memo	0.00							

Packaging ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***
Ensure copy of NDT results attached to work order.

mg 14/8/18
IX SP 14-8-15

Work Order ID 123172

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Item ID: D212-664-201 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Aft Crosstube - High
 Start Date: 7/30/14 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 8/08/14 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	QC5- Inspect part completeness to step on W/O	0.00	DAS	16					
200			9-89	14/08/15					
QC	Memo	0.00							
Quality Control	***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***								
	Inspect for damage & ensure results are as per Dwg D212-664-241								
204	Crosstubes Chemical Conversion	0.00							
204									
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes	***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***								
	1- PRESSURE WASH AND THEN USE WASH'N WIPE TO CLEAN CROSSTUBE BEFORE CHEMICAL CONVERSION								
206	QC7-Inspect Chemical Conversion Coat	0.00							
206									
QC	Memo	0.00							
Quality Control	***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***								
									DAS 41 9-89 14-8-15

Work Order ID 123172

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Item ID: D212-664-201 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Aft Crosstube - High
 Start Date: 7/30/14 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/08/14 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Spray Painting per QSI005 4.2	0.00							
210	SprayPaint	0.00							
Spray Painting	Memo								
	*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***								

1-Prime inside and outside crosstube as per QSI 005 4.2

PRIME BATCH: 129807 DAS 129807
 Start Time: 7:00
 Finish Time: 10:00

MASK UNDERSIDE OF CROSSTUBE AS SHOWN ON DWG

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PAINT BATCH: 129977
 Start Time: 7:30
 Finish Time: 9:00

3- Remove masking and apply matte clear coat as per dwg

CLEAR BATCH: 129972 DAS 129972
 8-89

Work Order ID 123172

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Item ID: D212-664-201 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Aft Crosstube - High
Start Date: 7/30/14 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 8/08/14 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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220	QC14- Inspect Spray Paint	0.00							
220									
QC	Memo	0.00							
Quality Control	Then, Wrap in plastic bag to protect from scratches								

DAS
02 ET 14-08-26
9-89

230	Crosstubes	0.00							
230									
Crosstubes	Memo	0.00							
Crosstubes	1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg								

DAS
41
9-89

14-8-28

2- Install supports with Proseal 890 per D212-664-241 and QSI 015
A/R Proseal 890 Batch: 136090
EXP: 1/15
PROSEAL CURE TIME 72 HOURS:
Start: 14-8-28
Finish: 14-9-1

3- Install clamps with rubber cushion (ENSURE CLAMPS ARE INSTALL ON TOP SIDE OF CROSSTUBE) using DT9565 as per Dwg D212-664-241.

Torque all clamps to 80-100 IN-LBS.

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123172

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Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Item Name: Aft Crosstube - High

Start Date: 7/30/14 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 8/08/14 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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240

QC5- Inspect part completeness to step on W/O

0.00

240

QC

Quality Control

Memo

0.00

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 72HOURS AS PER DWG.***

① 14.09.02 DAS
9
9-89

250

Pick Kit

0.00

250

Packaging

Packaging

Memo

0.00

DAS 32 9-89 14/7/2 (1) DAS 06 9-89

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Quality Control

Memo

0.00

① 14.09.02

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Item ID: D212-664-201 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Aft Crosstube - High
Start Date: 7/30/14 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 8/08/14 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270	Packaging					DAS			
Packaging	Memo	0.00			SEP 03 2014	06			
Packaging	Identify and pack for shipping as per PPP D212-664-201					9-89			
280									
280	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

MLJ 1409-08

MLJ 1409-05

Picklist Print

July-30-14 11:49:46 AM

Page 1

Work Order ID: 123172

123172

Parent Item: D212-664-201

D212-664-201

Parent Item Name: Aft Crosstube - High

Start Date: 7/30/14

Required Date: 8/08/14

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:E04.02.16ReformatK/DS
 IPP Rev:F 06-03-29 Remove Coments on Pick List JLM
 IPP Rev:G 07-04-30 As per Rev C JLM
 IPP Rev:H 08-05-22 up date Qty of rubber cushion DD verf:EC IPP REV:I
 14.05.27 AS PER ECN14-570 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D212-664-
201TRNRevC

Manufactured No

110

Each

0.0000

1

1

D212-664-201TRNRevC

Crosstube Turning Detail

D3595-063-530

Manufactured No

230

Each

150.0000

2

2

D3595-063-530

Rubber Cushion

Location

Loc Qty

Loc Code

FG

5

82656

5

LG051

145

110937

2

111194

6

113291

8

113930

5

117571

124

D2940-1

Manufactured No

230

Each

28.0000

2

2

D2940-1

Support

Location

Loc Qty

Loc Code

LG051

11

120535

11

LG052

17

103951

6

109042

3

119658

8

Handwritten signature/initials

Handwritten number 2

Handwritten date 14.08.27

Handwritten date 14.08.27

Handwritten BL 14-07-31

Picklist Print

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Page 2

Work Order ID: 123172

123172

Parent Item: D212-664-201

D212-664-201

Parent Item Name: Aft Crosstube - High

Start Date: 7/30/14

Required Date: 8/08/14

Start Qty: 1.00

Required Qty: 1.00

MS21920-28

Purchased

No

230

Each

103.0000

4

4

MS21920-28

Clamp

CR 1408 27

Location

Loc Qty

Loc Code

FG

1

105884

1

LG050

98

M128363

1

M128771

21

M128772

3

M129279

73

Return2014

4

128717

4

D3428-1

Manufactured

No

250

Each

20.0000

1

D3428-1

Placard

DAS
32
9-89

DAS
06
9-89

Location

Loc Qty

Loc Code

ST038

20

107703

1

119695

7

120584

12

MS21042L6

Purchased

No

250

Each

489.0000

6

MS21042L6

Nut

DAS
32
9-89

DAS
06
9-89
14/9/21

Location

Loc Qty

Loc Code

ST307

489

m127831

23

m128635

3

m129499

263

m129909

200

M129499

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Shop Packet Print

Page 2

Picklist Print

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Page 3

Work Order ID: 123172

123172

Parent Item: D212-664-201

D212-664-201

Parent Item Name: Aft Crosstube - High

Start Date: 7/30/14

Required Date: 8/08/14

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0663J

Purchased

No

250

Each

1,742.000

18

18

NAS1149D0663J

Washer
DAS
9-89

**

DAS
32
9-89

DAS
86
9-89

Location

Loc Qty

Loc Code

ST276

1742

123265

4

M126284

3

M126334

699

M127813

35

M127916

12

M128818

389

M129913

600

AN6-40A

Purchased

No

250

Each

131.0000

4

AN6-40A

Bolt

**

DAS
32
9-89

DAS
86
9-89

Location

Loc Qty

Loc Code

ST333

131

M128634

31

M129521

50

M129934

50

AN6-41A

Purchased

No

250

Each

100.0000

2

AN6-41A

Bolt

**

DAS
32
9-89

DAS
86
9-89

Location

Loc Qty

Loc Code

ST333

100

M126180

4

M128849

36

M129913

30

M129934

30

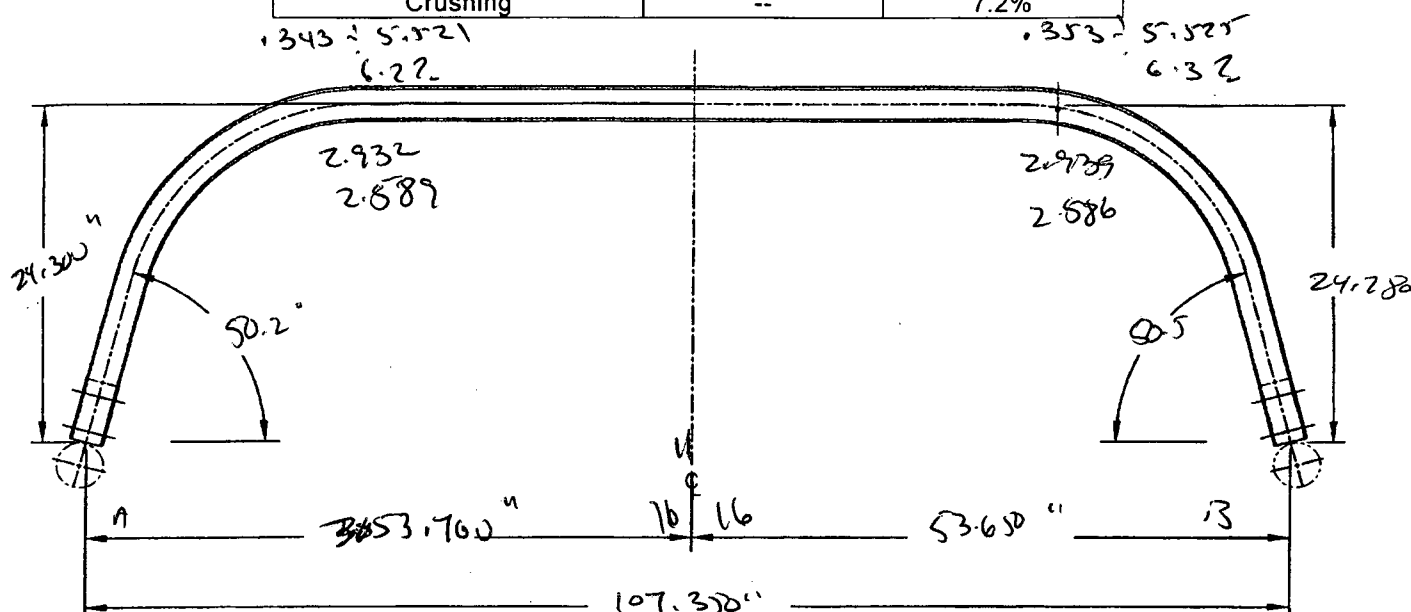
July-30-14 11:49:47 AM

Shop Packet Print

Page 3

DART AEROSPACE LTD	Work Order:	123172
Description: Crosstube High Aft (205/212)	Part Number:	D212-664-201
Inspection Dwg: D212-664-241 Rev: E		Page 1 of 1

Required Dimension	Min	Max
Height	24.17	24.43
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70
Bending Passes	5	--
Crushing	--	7.2%



	Side A	middle	Side B
Bending Passes	16	11	16
Crushing	6.27%		6.37%
Comments			
Side A 2	6.27% crush	Q	16 Passes
middle 2	11 Passes		
Side B 2	6.37% crush	Q	16 Passes

QC15 Inspection	DAS
Date	16 9-89 14/02/05

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. C	KJ/JLM	
C	10.04.01	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.07.08	Crushing percentage revised	KJ	

Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-864-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2		D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6		2	D5018-1	SUPPORT
7	4	4	MS21920-28	CLAMP (OR MS21920-30)
8	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.362±0.020
- FINISH: a) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
b) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
c) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
d) PAINT OUTSIDE PER DART QSI 005 4.2
e) REMOVE MASKING AND APPLY MATTE CLEAR COAT
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: D212-664-241/-241B = 44.2 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.

BENDING

- BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R35.5 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

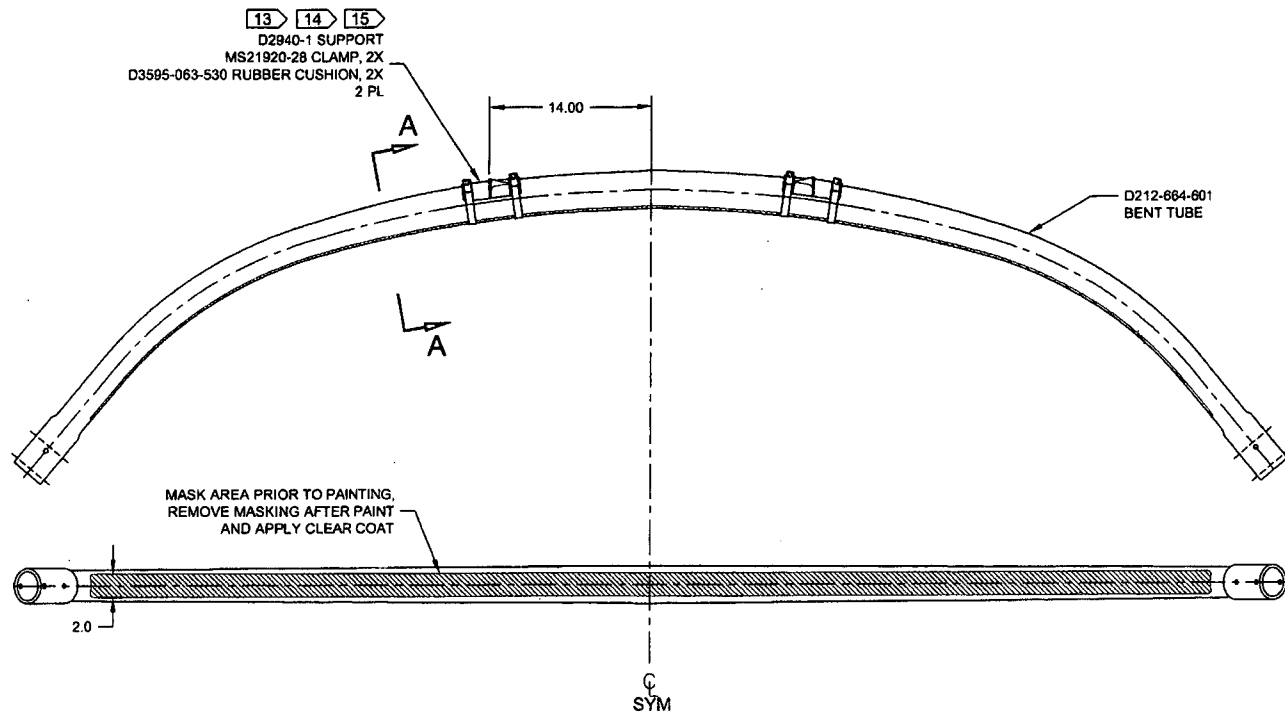
ASSEMBLY

- INSTALL D2940-1 / D5018-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

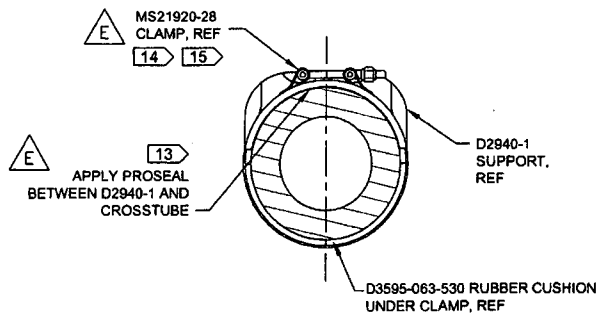
W/O
123172

RELEASED
2014-05-26

E	D5018-1 WAS D2940-1 (-241B). PROSEAL WAS MAGNOBOND. NOTE 2: ADD INSPECTION WINDOW, NOTE 11: ALLOW 7.2% CRUSH, NOTE 15: ADD 72HR CURE AND RETORQUE FOR PROSEAL, ADD SHEET 3, CLAMPS REVERSED TO PREVENT CHAFING (ZN B7-2, B7-3), BEND HEIGHT TOL. NOW 0.25 WAS 0.13 (C1-4), INCORP DEO D-1/-2	CP	14.04.01
D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 05-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 8398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	Q		
DRAWN	Q		
CHECKED	DW		
MFG. APPR.	J.M.		
APPROVED	J.M.		
DE APPR.	J.M.		
DATE	14.04.01		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D212-664-241 SHEET 1 OF 5 TITLE CROSSTUBE ASS'Y (205/212 HI AFT) SCALE NTS COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR DISCLOSED OR COPIED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



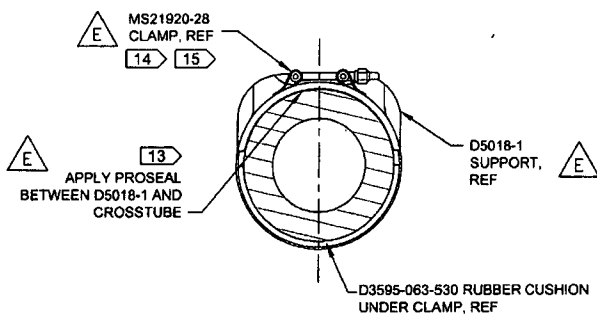
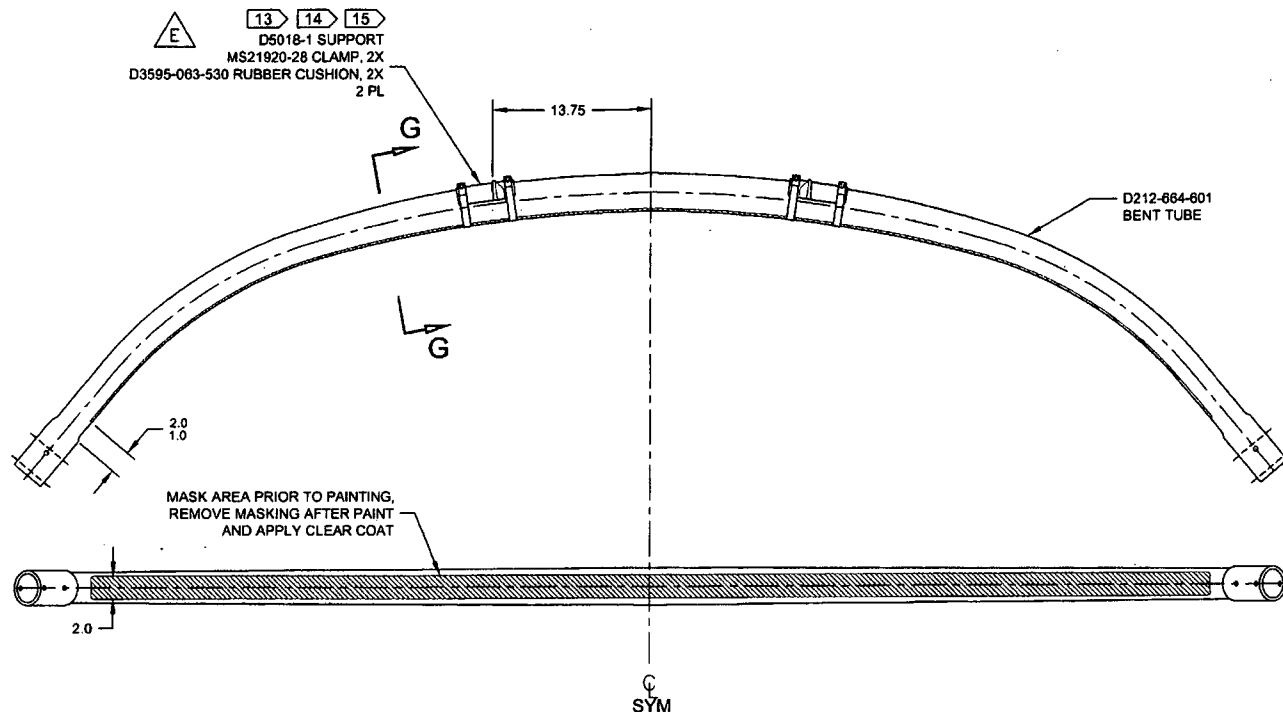
**D212-664-241
ASSEMBLY DETAIL**



**SECTION A-A
SCALE 4X**

RELEASED
2014-05-26
WMP

DESIGN	Q	DART AEROSPACE LTD	
DRAWN	Q	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DL	DRAWING NO.	REV. E
MFG. APPR.	W	D212-664-241	SHEET 2 OF 5
APPROVED	W	TITLE	SCALE
DE APPR.	W	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	14.04.01	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

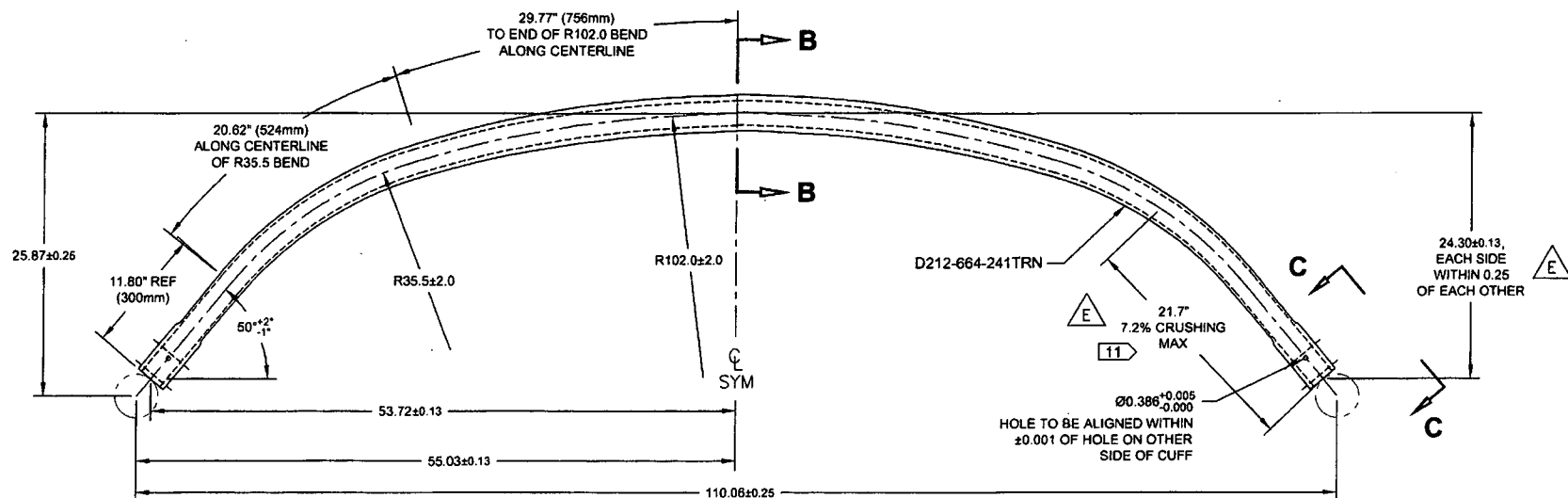


SECTION G-G
 SCALE 4X

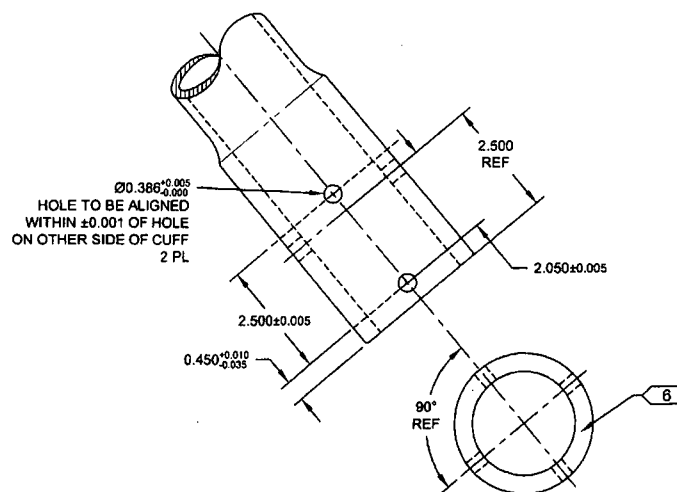
D212-664-241B
ASSEMBLY DETAIL

RELEASED
 2014-05-26

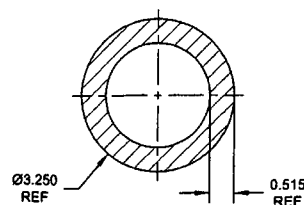
DESIGN	90	DART AEROSPACE LTD	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DLW	DRAWING NO.	REV. E
MFG. APPR.	AP	D212-664-241	SHEET 3 OF 5
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	14.04.01	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



D212-664-601 11
BENDING AND DRILLING DETAIL



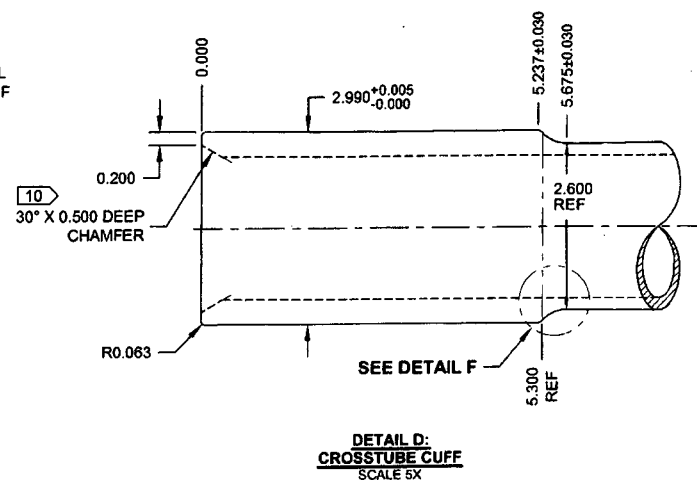
VIEW C-C: CUFF DETAIL
 SCALE 3X



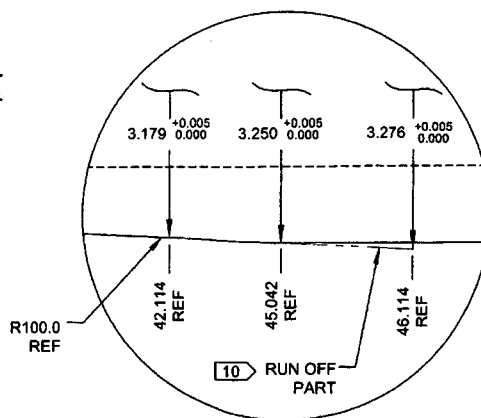
SECTION B-B
 SCALE 4X

RELEASED
 2014-05-26
MP

DESIGN	<i>DP</i>	DART AEROSPACE LTD	
DRAWN	<i>DP</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>DP</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>DP</i>	D212-664-241	SHEET 4 OF 5
APPROVED	<i>DP</i>	TITLE	SCALE
DE APPR.	<i>DP</i>	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
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DETAIL F:
CUFF TRANSITION
SCALE 10X



DETAIL E:
TAPER RUN-OFF
NOT TO SCALE

RELEASE
2014-05-26

DESIGN	90	DART AEROSPACE LTD	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	90	DRAWING NO.	REV. E
MFG. APPR.	90	D212-664-241	SHEET 5 OF 6
APPROVED	90	TITLE	SCALE
DE APPR.	90	CROSSTUBE ASSY (205/212 HI AFT)	NT
DATE	14.04.01	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED BY ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Time sheet
~~1:50~~

212-664-201 "Folio"

Batch#:

Setup

Rollers 3.25 x 3 ****without spacers***

Large Table, Shims 1.85" for SA bend, shims 1.7" for SB bend (new buggy)/adjust supporting rollers as required.

From cuffs, mark tube @ 32.1875 & **35.1875 RED** and center line

Middle Bend

Start bending on 32.1875 line w/tube on **LARGE TABLE**. Approach from this line is **2775 on both Y&W**. Use programs middleauto2.

SEE NOTES (14/04/09) FOR INSTRUCTIONS ON BENDING MIDDLES

Side bends

Start bending on **35.1875** line with long part of tube on **LARGE TABLE**. approach of **Y 1900 W 3735**

Run programs s01-s05 without stopping, CHECK, then s06 to 16 to finish. CHECK between each program..

Approach for Prog s06 to s16 is Y 2190 and W 3735

CHANGED 35.187 LINE TO 34.9, did not work! DP 11-8-11

11/11/02 tried new tangent line today. tube was far too high. nearly scrapped. 24.75 on one side, 24.5625 on the other. max tolerance is 24.43. jw

12/05/29 NOW USING ORIGINAL TANGENT LINES AGAIN

14-03-10 bent 4 tubes, all were on reference lin for middle bend. all tubes turned out too high, next time, try underbending muddles by approx 1/16" to try to achieve nominal measurement on height and span. tubes were finishing at program 8 - JW

14-04-09 removed points and re-adjusted "x" movement on program middleauto. RENAMED middleauto2. this underbent middles by aprox 0.0625"-0.125" then ran 1-5 CHECK, 5c, 6,7,8 checking between each. this has fixed height and tubes were finishing closer to nominal measurements. program "middleauto" is still in system as a failsafe.

Passes:

1
2
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11-8-11
②

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11
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13
14
15

**skyservice****Work Order Traveler**
Sky Service F.B.O. Inc.

Page: 1 of 1

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO21730	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 25318
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN: 0	CSN: 0	TSO: 0	
Task: UNSCHEDULED			Sequence: 1

Work Required:**CARRY OUT NDT INSPECTION (LIQUID PENETRANT) ON 6 CROSSTUBES**

ITEM ID: D206-667-203BL

1 - WORK ORDER ID#: 122764

2 - WORK ORDER ID#: 122768

3 - WORK ORDER ID#: 122769

ITEM ID: D212-664-201

4 - WORK ORDER ID#: 119715

5 - WORK ORDER ID#: 119716

6 - WORK ORDER ID#: 123172

Action Taken:						Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-6) AS PER ASTM1417M-13						AUG 07 2014	
NO CRACK FOUND							
Pen: ZL-56 BATCH# 09H094 EXP. DATE: AUG 2014, DEV: SKD-S2 EXP. DATE: OCT2017 CLEANER: SKC-S EXP. DATE: APR 2018							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp 	Date:
Name: ANTONINO MARCHETTA		AUG 07 2014



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO25318

Purchase Order Date 8/7/2014

PO Print Date 8/15/2014

Page Number 3 of 3

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone

Ship Via Delivered
Ship Acct

Buyer Michael Gregoire
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$0.00

7	119716	D212-664-201 Aft Crosstube-High	8/7/2014	1.00	✓	\$0.00	\$0.00
---	--------	------------------------------------	----------	------	---	--------	--------

No
8/15/2014

To cover the cost of NDT inspection as per ASTM1417M-13
B119716

Line Total: \$0.00

8	123172	D212-664-201	8/7/2014	1.00	✓	\$0.00	\$0.00
---	--------	--------------	----------	------	---	--------	--------

No
8/15/2014

To cover the cost of NDT inspection as per ASTM1417M-13
B123172

Line Total: \$0.00

PO Total: \$0.00

8014-8-15

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 3 Change Date: 8/15/2014



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

Page: 1 of 1

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO21730	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 25318
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN: 0	CSN: 0	TSO: 0	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT INSPECTION (LIQUID PENETRANT) ON 6 CROSSTUBES

ITEM ID: D206-667-203BL

1 - WORK ORDER ID#: 122764 ✓

2 - WORK ORDER ID#: 122768 ✓

3 - WORK ORDER ID#: 122769 ✓

ITEM ID: D212-664-201

4 - WORK ORDER ID#: 119715 ✓

5 - WORK ORDER ID#: 119716 ✓

6 - WORK ORDER ID#: 123172 ✓

S. 17/08/15

SOPN-8-15

Action Taken:						Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-6) AS PER ASTM1417M-13						AUG 07 2014	
NO CRACK FOUND							
Pen: ZL-56 BATCH# 09H094 EXP. DATE: AUG 2014, DEV: SKD-S2 EXP. DATE: OCT2017 CLEANER: SKC-S EXP. DATE: APR 2018							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		ACA/SCA Stamp	Date:
Name:			AUG 07 2014